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Amendments to the Claims:

The following claims will replace all prior versions of the claims in this application (in the unlikely event that no claims follow herein, the previously pending claims will remain):

1. (Currently Amended) An electro-absorption optical modulator comprising:
an absorption layer;
upper and lower clad layers formed on upper and lower portions of the absorption layer, respectively; and
electrodes for applying an electric field to the absorption layer,
wherein the absorption layer has a vertical combination of at least two quantum wells having a width different from each other;
wherein the at least two quantum wells include a first quantum well having a narrow width and a second quantum well having a wide width, the absorption layer having at least one of the first quantum well and at least one of the second quantum well at a number ratio of $m > n$, where m is the number of first quantum wells and n is the number of second quantum wells; and
wherein an α value of the first quantum well is larger than an α value of the second quantum well.

2. (Cancelled)

3. (Currently Amended) The electro-absorption optical modulator as claimed in claim 2, wherein ~~an~~ the α value of the first quantum well is larger than that of ~~an~~ the α value of the second quantum well in the following equation:

$$P_{out} = P_{in} \exp(- (V/V_0)^\alpha)$$

4. (Previously Presented) The electro-absorption optical modulator as claimed in claim 3, wherein the α value of the first quantum well is larger than that of the second quantum well by at least 0.5.

5. (Previously Presented) The electro-absorption optical modulator as claimed in claim 1, wherein the absorption layer includes a compound semiconductor base material.